

But I Didn't Drink the Water!

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Introduction

- * Tuesday January 13, 2015:
 - * Public Information Officer (PIO) received an email from a news reporter in Pittsburg, PA with questions regarding an incident at a hotel indoor swimming pool in Wood County
 - * Incident took place on Saturday January 10, 2015
 - * Reporter was informed by a parent of wrestler

Introduction (cont.)

- * PIO contacted Department of Infectious Disease Epidemiology (DIDE) inquiring about the incident
- * DIDE informs the Regional Epidemiologist of incident
- * Regional Epidemiologist initiates investigation

Background

- * Recreational water illness:
 - * Illness caused by germs or chemicals found in water that is swam in
- * Chloramine illness symptoms:
 - * Stinging eyes
 - * Nasal irritation
 - * Difficulty breathing

Background (cont.)

- * Chloramine:
 - * Irritants that build up in water and/or air
 - * Chlorine by-products are created when chlorine combines with:
 - * Sweat
 - * Urine and other waste

Methods: Epidemiology

- * Online questionnaire
- * Questionnaire was designed to evaluate:
 - * Individual's exposure to pool
 - * Condition of pool
 - * Pre-existing injuries
 - * Symptoms experienced
 - * Personal cleanliness at time of incident

Methods: Environmental

- * Monday January 12, 2015 hotel staff contacts Mid-Ohio Valley Health Department's environmental staff for assistance
- * Sanitarian conducted a site visit to evaluate pool conditions
 - * January 12 (Monday)
 - * January 14 (Wednesday)
 - * January 16 (Friday)

Methods: Laboratory

- * Water specimens collected by sanitarian for testing
- * Specimens were tested for:
 - * Bacteriology
 - * Free chlorine level
 - * pH value
 - * Total combined chlorine level

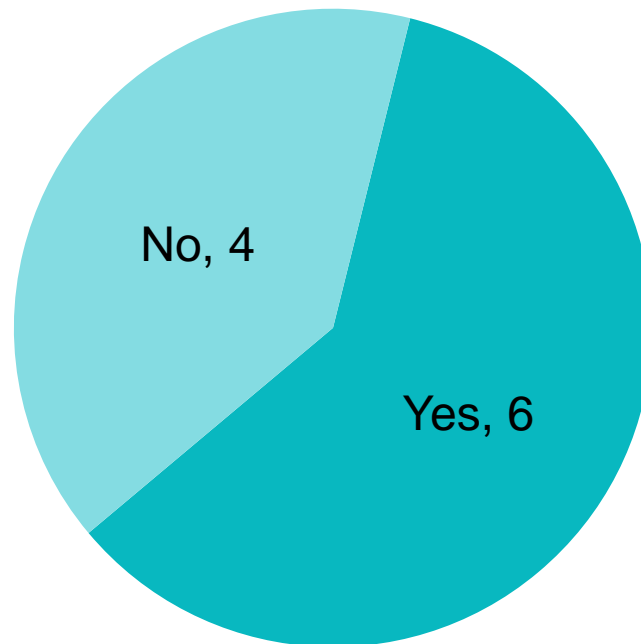
Results: Epidemiology

- * All families on wrestling trip received questionnaire
 - * 20 families on trip
 - * Wrestling organization provided contact information
- * Questionnaire sent by email
 - * Epidemiology and environmental questions

Results: Epidemiology (cont.)

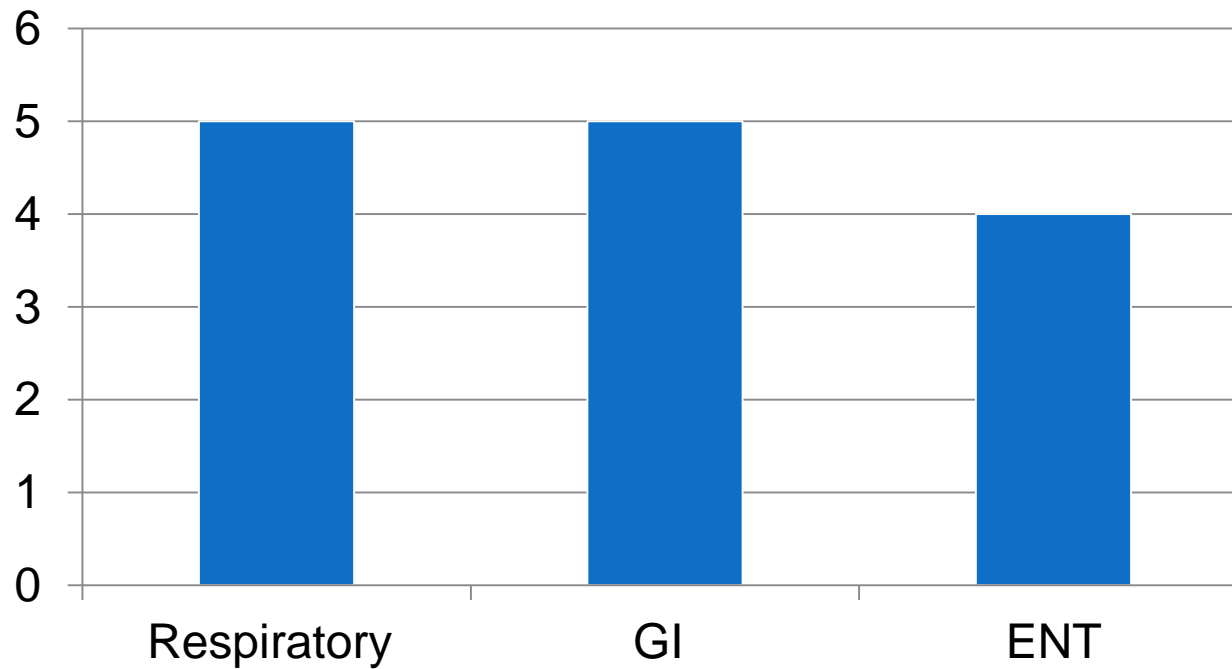
- * Of the 20 questionnaires sent out, 14 were returned
- * Of those 14 returned, 10 reported swimming on day of incident
- * Of those 10 swimmers, 6 experienced adverse effects
 - * Most common symptoms:
 - * Chest tightness, shortness of breath, coughing, nausea

Experienced Symptoms After Swimming on January 10th (N=10)

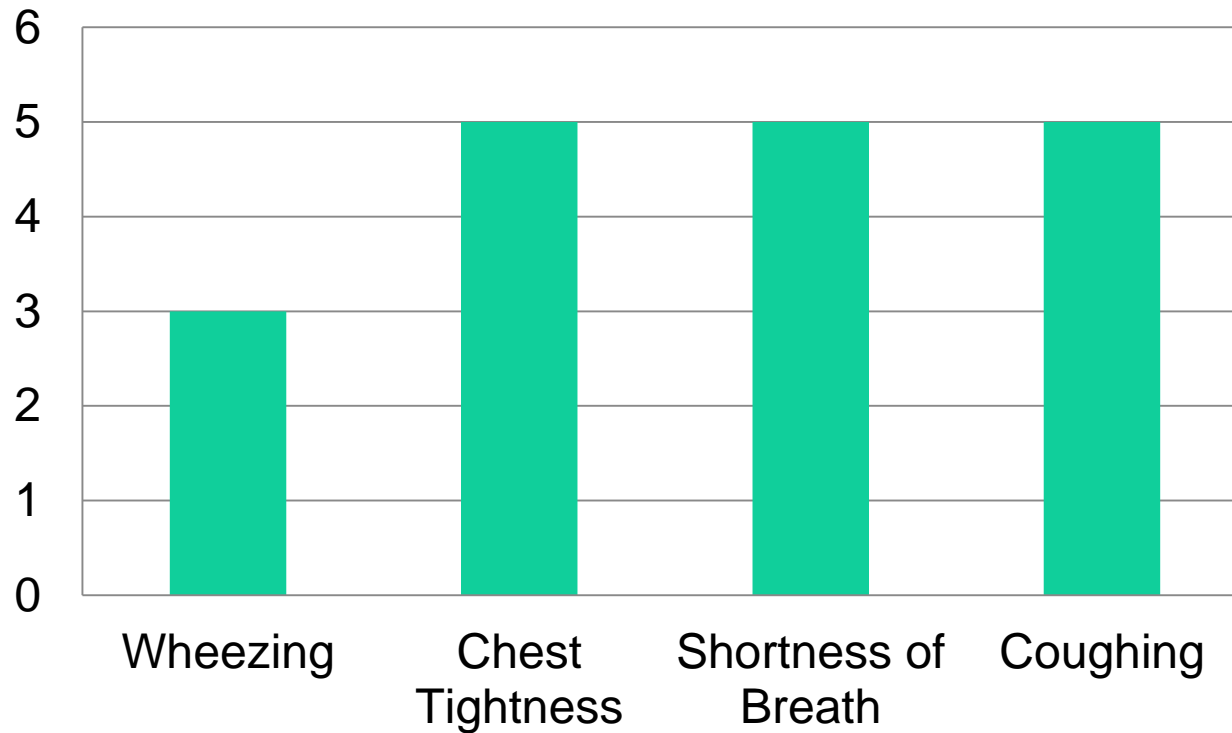




Symptoms Exhibited Per Body System (N=6)

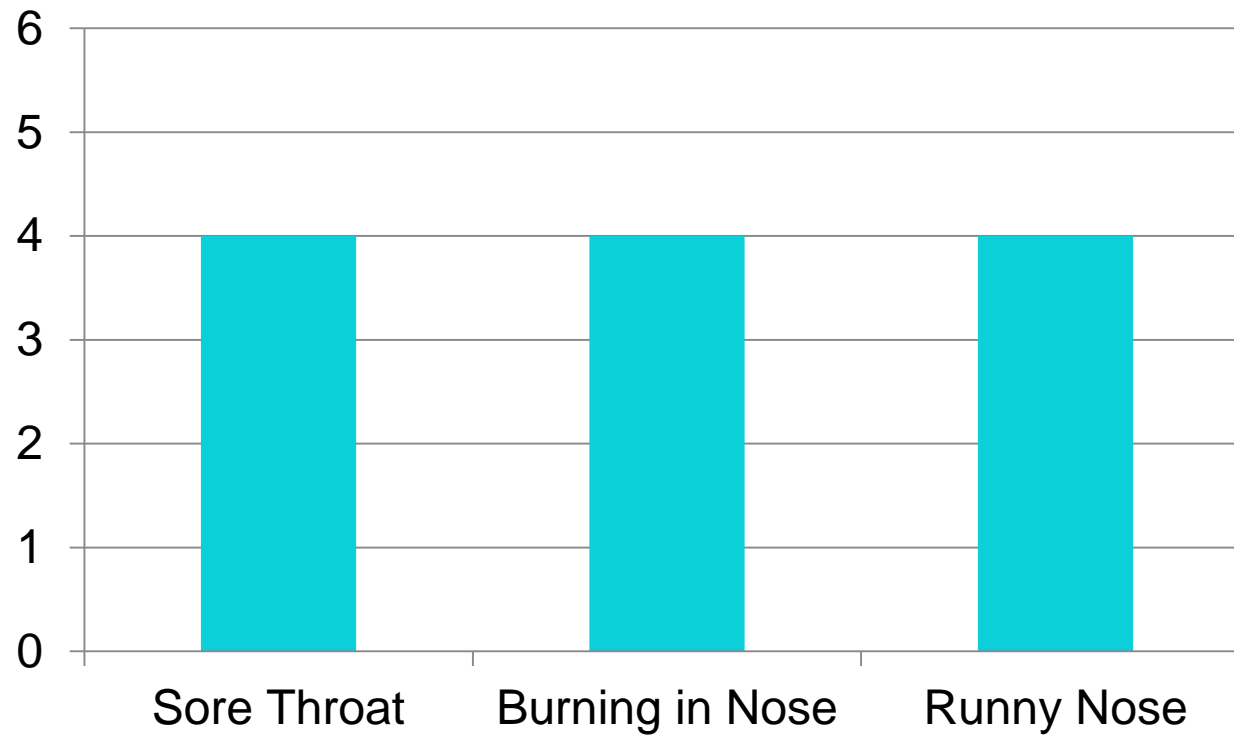


Respiratory Symptoms (N=6)

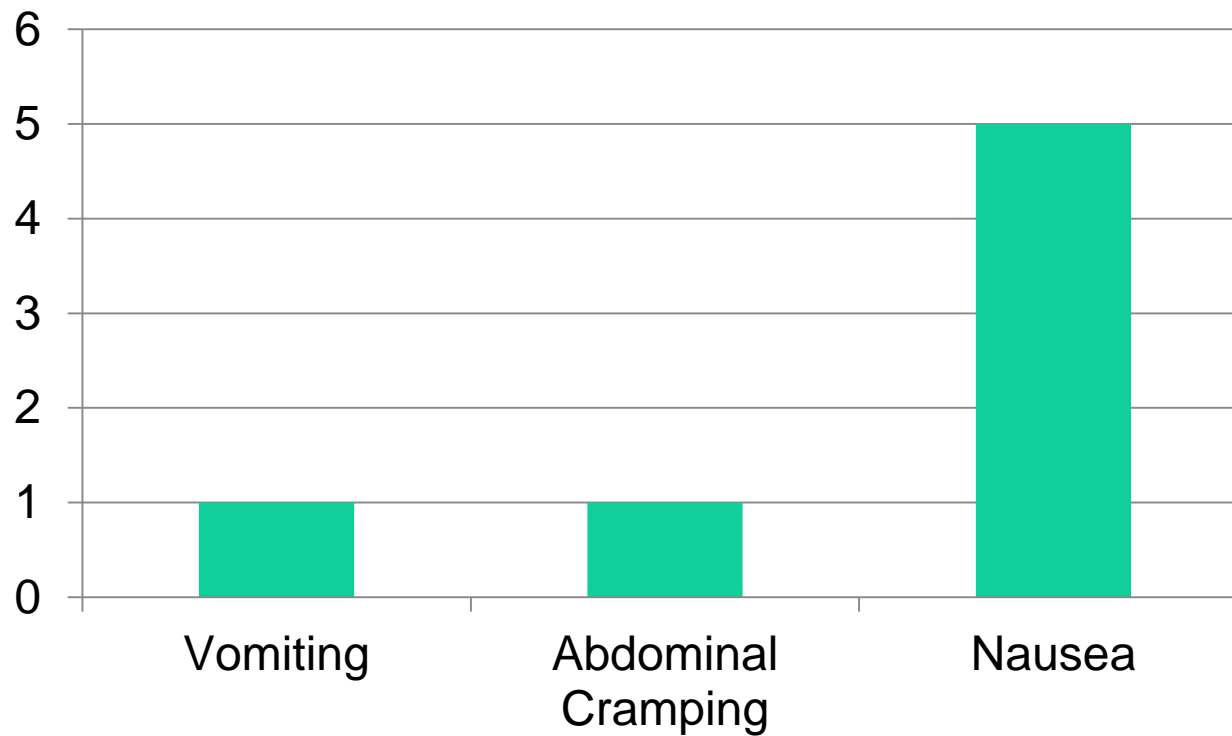




ENT Symptoms (N=6)

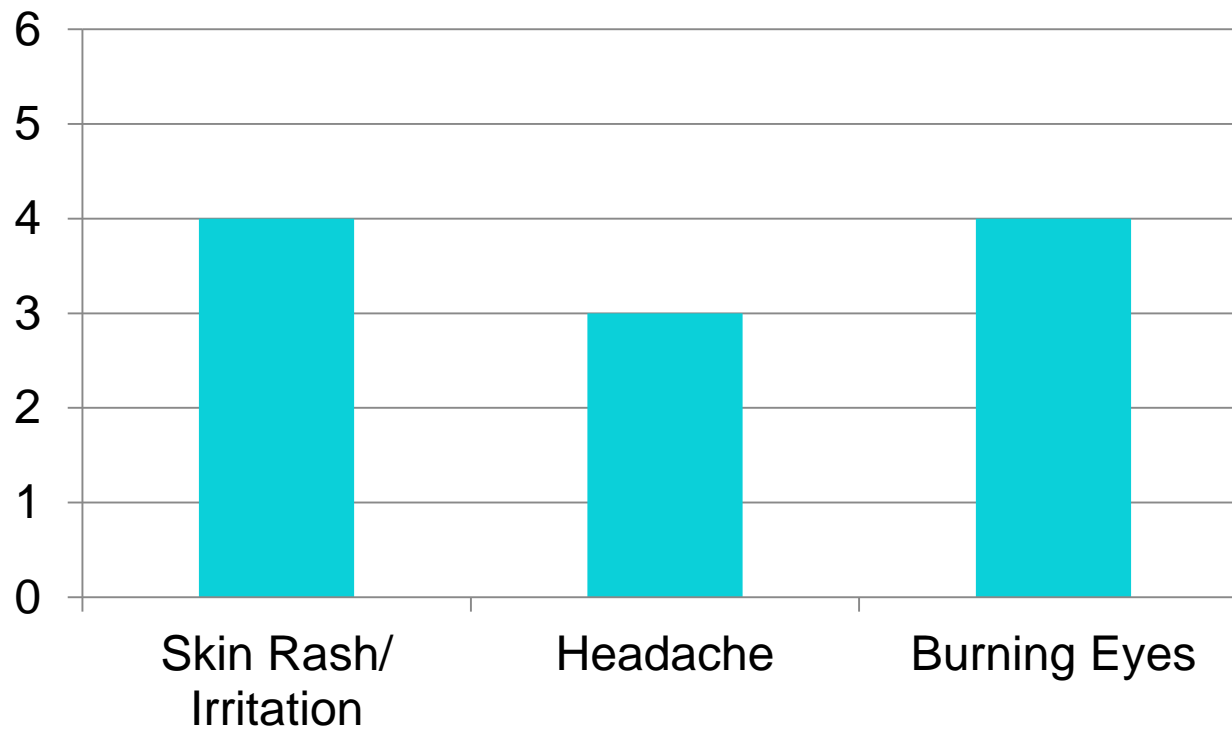


Gastrointestinal Symptoms (N=6)





Other Notable Symptoms (N=6)



Results: Epidemiology (cont.)

- * 8 out of 10 swimmers did not shower the day of the incident
- * Symptoms documented by EMT on Saturday:
 - * Skin redness and irritation
 - * Eye irritation and some eye swelling
 - * 15 children and 1 adult

Results: Environmental

- * Survey results (N=14):
 - * 9 reported a smell or odor in pool area
 - * 7 reported noticing cloudiness in the pool water
 - * 1 reported seeing discoloration
- * Hotel staff closes pool after incident and noted the water as cloudy
 - * Pool closed after incident Saturday and Sunday

Results: Laboratory

- * Monday January 12, 2015
 - * Bacteriology submitted for testing
 - * Free chlorine = normal limits
 - * pH readings = normal limits
 - * Pool opened

Results: Laboratory (cont.)

- * Wednesday January 14, 2015
 - * Free chlorine levels exceeded acceptable threshold
 - * Total chlorine too high to measure
 - * Per hotel staff, chlorine feeder not working properly
 - * Pool closed by sanitarian

Results: Laboratory (cont.)

- * Friday January 16, 2015
 - * Chlorine feeder replaced since last sanitarian visit
 - * Acceptable conditions when inspected
 - * Pool opened

Discussion: Epidemiology

- * 16 swimmers were assessed for recreational water illness by EMT due to symptoms after swimming
- * 10 swimmer questionnaires returned
 - * Symptoms reported were consistent with chloramine exposure

Discussion: Epidemiology (cont.)

- * 8 out of 10 swimmers did not shower the day of the incident
 - * Likely to cause a substantial amount of organic material in pool water
 - * Possibly increasing chloramine irritants

Discussion: Environmental

- * Manual adjustment for pH levels at the pool
- * Chlorine feeder known to not work properly
 - * Stated by hotel staff on January 13, 2015

Discussion: Laboratory

- * Specimens not taken day of incident
- * Specimens reading varied days after incident
 - * Monday levels were acceptable
 - * Wednesday levels were well above acceptable limits
 - * Friday levels were acceptable

Limitations

- * Many factors that could contribute to incident
- * No specimen collected at time of incident
 - * No environmental testing until two days later
- * Lack of communication within the health department
- * Delayed notification
 - * Informed Tuesday of incident from news reporter

Recommendations

- * Improving fresh air exchange in pool area
 - * Increase air turnover rate to reduce irritants
- * Use secondary disinfection system
 - * Ultraviolet light
- * Constant monitoring of water quality
 - * Follow state and national guidelines
 - * American National Standards Institute (ANSI)

Recommendations (cont.)

- * Get swimmers to shower prior to using pool
- * Encourage swimmers to take regular bathroom breaks
- * Continue to educate staff and guest

Lessons Learned

- * Report of an outbreak can come by the media
- * Communication between the environmental health and the epidemiology department is vital
- * It is possible to get ill from the water, even if you do not drink the water

Questions?

